PB89-204804

Superfund Record of Decision (EPA Region 6): South Valley (SJ-6), New Mexico (Third Remedial Action), September 1988

(U.S.) Environmental Protection Agency, Washington, DC

30 Sep 88

U.S. Department of Commerce
National Technical Information Service
NTIS

United States
Environmental Protection
Agency

Office of
Emergency and
Remedial Response

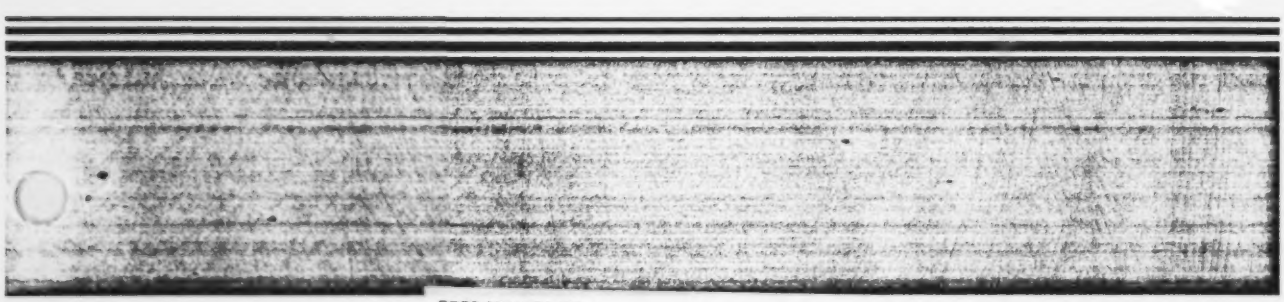
EPA/ROD/R06-88/041
September 1988

PB89-204804

EPA

Superfund Record of Decision:

South Valley(SJ-6), NM



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SPRINGFIELD, VA. 22161

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA/ROD/R06-88/041	2.	3. Recipient's Accession No. PB89 204804/AS

4. Title and Subtitle
SUPERFUND RECORD OF DECISION
South Valley/SJ-6, NM
Third Remedial Action

5. Report Date 09/30/88

6.

7. Author(s)

8. Performing Organization Rept. No.

9. Performing Organization Name and Address

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

13. Type of Report & Period Covered
800/000

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

The South Valley/SJ-6 site is located on the southern margin of Albuquerque, New Mexico, just north of South Valley. The total site encompasses the SJ-6 municipal well, and six industrial facilities and their surrounding properties within an approximately one square mile radius. Land use is primarily industrial and agricultural with residential areas located immediately north of the site. Industrial development began in the South Valley area just prior to the 1940s. Metal parts were manufactured in the area starting around 1948. By the 1960s, organic chemicals were being handled and packaged on the site. Currently, petroleum fuels and various chlorinated organics are stored, handled and used within the South Valley areas. Ground water contamination was first suspected in 1978 when foul tastes and odors were noted in ground water from a private well on the Edmunds property in South Valley. Subsequent sampling revealed the presence of several VOCs in three municipal wells including SJ-6. One of the wells was resampled in 1988 and found to be free of contaminants, another well was taken out of service because of mechanical problems, and SJ-6 was shut down in 1980 due to the continual detection of low levels of solvents. This ROD addresses only the source and extent of ground water contamination in the vicinity of JS-6. Principle threats at the site (i.e., the source and emanating plumes of contamination from surrounding areas) are
(See Attached Sheet)

17. Document Analysis a. Descriptors
Record of Decision
South Valley, SJ-6, NM
Third Remedial Action
Contaminated Media: gw
Key Contaminants: VOCs (1,1-DCE, PCE, TCE)

b. Identifiers/Open-Ended Terms

COSATI Field/Group

Availability Statement	19. Security Class (This Report)	21. No. of Pages
1	None	62
	20. Security Class (This Page) None	22. Price MF PC A13, A99 6.95

16. ABSTRACT (continued)

being addressed through remedial actions initiated by EPA in separate RODs. The primary contaminants of concern affecting the ground water are VOCS including 1,1-DCE, PCE and TCE.

The selected remedial action for this site includes: removal and disposal of 100 yd^3 of contaminated sediments at the base of the SJ-6 borehole; sealing abandoned wells; ground water monitoring; and access restrictions. The estimated present worth cost for this remedial action is $4,000,000 with estimated annual O&M of $300,000.

RECORD OF DECISION

FOR

SAN JOSE 6 (SJ-6) SUPERFUND SITE

SOUTH VALLEY
ALBUQUERQUE, NEW MEXICO

SEPTEMBER 1988

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

South Valley San Jose 6 (SJ-6) Superfund Site.
Albuquerque, New Mexico.

STATEMENT OF PURPOSE

This document describes the remedial action selected by the Environmental Protection Agency (EPA) for the SJ-6 portion of the South Valley San Jose 6 Superfund site. It is developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Contingency Plan (40 CFR Part 300).

The State of New Mexico has been consulted regarding this remedy. Although the New Mexico Environmental Improvement Division initially objected to EPA's proposal, they now support EPA's decision (Appendix A).

STATEMENT OF BASIS

This decision is based upon the Administrative Record for the South Valley SJ-6 Superfund site. The attached index (Appendix B) identifies the items comprising the Administrative Record.

Based upon the findings of the Remedial Investigation, Endangerment Assessment, and Feasibility Study, EPA concludes that the trace concentrations of solvents in the vicinity of SJ-6 do not pose a threat to public health or the environment. This does not include solvent contamination directly beneath and emanating from the USAF/General Electric and Edmunds Street properties. These sources of contamination are being addressed by remedies described in Records of Decision for the Edmunds Street Groundwater Operable Unit (6/28/88), in the Edmunds Street Source Control Operable Unit (an anticipated 1st qtr/1989 decision), and in the Former Air Force Plant 83/General Electric Record of Decision (9/88).

DESCRIPTION OF SELECTED REMEDIAL ACTION

EPA has selected a remedy for SJ-6 consisting of cleaning and sealing abandoned wells, groundwater monitoring for at least 30 years and access restrictions. Groundwater monitoring will include installation of wells north and east of the site, in the downgradient direction. The water supply lost as a result of SJ-6 contamination has been replaced by the construction of a new municipal well, the Burton No. 4. This remedy selection is documented in a separate Record of Decision (March, 1985).

To address concerns raised by the State of New Mexico regarding the permanence and effectiveness of the selected remedy, this decision also provides for a review of environmental conditions in the vicinity of SJ-6 after five years. This should be a coordinated review to include data from the SJ-6 effort and the efforts resulting from the above-referenced decisions. If remedial actions for petroleum are implemented at this time, the hydraulic information collected from these actions should also be integrated into the review.

DECLARATION (cont'd)

If Superfund contamination is found to exceed applicable or relevant and appropriate standards, additional remediation, using Superfund authorities will be assessed.

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986, and the National Contingency Plan, I have determined that the above described SJ-6 remedial action will provide adequate protection of public health, welfare, and the environment. This remedy attains Federal and State requirements that are applicable or relevant and appropriate, and is cost-effective. It is determined that this remedial approach is permanent and that alternative treatment technologies have been considered to the maximum extent practicable.

The State of New Mexico has been consulted and supports the SJ-6 remedial action if the proposed remedies for the adjoining USAF/GE portion of the South Valley San Jose 6 site are implemented. If any significant adverse trends are detected during groundwater monitoring, the impact to public health will be reevaluated and, if necessary, future action will be considered.

September 30, 1988
Date

Robert E. Layton Jr.
Robert E. Layton Jr., P.E.
Regional Administrator

SAN JOSE 6 (SJ-6) SUPERFUND SITE
ALBUQUERQUE, NEW MEXICO
SEPTEMBER, 1988

EXECUTIVE SUMMARY

The San Jose 6 (SJ-6) Superfund Site is located at the southern margin of Albuquerque, New Mexico (Fig. 1). The site encompasses six industrial facilities and the surrounding areas, within about 1 square mile radius (Fig. 2). Land use is primarily industrial and agricultural as well as residential. SJ-6 is a municipal well in which chlorinated solvents were detected in 1981. The site was subsequently listed on the National Priorities List in 1983 as the State of New Mexico's top priority.

The six industrial facilities were identified as being potentially responsible for contributing to and/or being the source of contaminants detected in Municipal well SJ-6. These six potentially responsible parties (PRPs) are the United States Air Force (former Air Force plant No. 83), now occupied by General Electric; Chevron, U.S.A.; Texaco; Whitfield Tank Lines; the Edmunds Street property owners; and Duke City Distributing. Chlorinated solvents have been detected at the USAF/GE facility and at the Edmunds Street property. The other four properties may be sources of petroleum contamination.

Based on the findings of the Remedial Investigation, and pending actions to be implemented for source control, the Environmental Protection Agency (EPA) concludes that a significant health threat is not posed by the residual contaminants detected in areas surrounding the PRP facilities. However, to mitigate a potential degradation of the Albuquerque drinking water supply, EPA has determined that it is necessary to seal abandoned wells in this industrial vicinity. This action precludes a direct and primary route for contaminant migration from shallower zones to the deep aquifers that supply municipal water. Sealing abandoned wells will also support the Wellhead Protection Program that is currently in the planning stages by the City of Albuquerque. To ensure protection of public health, groundwater monitoring will be performed within the current site boundaries as well as north and east of the site, in the downgradient direction. Access restrictions will also be imposed through the State Engineers office (Section 72-12-1; New Mexico statutes). These restrictions will impact the construction of new wells in the area. They will consist of construction techniques to prevent cross-contamination between water-bearing zones and completion depths will be below approximately 200-250 ft.

This remedy complies with the Comprehensive Environmental Response, Compensation and Liability Act 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (1986) SARA, and the National Contingency Plan.

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Summary of Remedial Alternatives for the
San Jose 6 (SJ-6) Superfund Site
Albuquerque, New Mexico

I. SITE LOCATION AND DESCRIPTION

The San Jose (SJ-6) Superfund site lies within about 1 square mile on the southern margin of Albuquerque, New Mexico (Figure 1), immediately north of an area known as the South Valley. Because chlorinated solvents were detected in groundwater discharged from SJ-6, the Superfund investigation centered around the well. The total site is comprised of the SJ-6 well and six industrial facilities in this square mile that were investigated by the Environmental Protection Agency (EPA). The EPA studies for this decision were focused on determining the sources and extent of contaminants detected in SJ-6. The EPA studies were conducted in the general vicinity surrounding, rather than on, the six facilities. Each of the six facilities conducted their own investigations on their sites under EPA guidance.

Land use is essentially industrial and agricultural with interspersed open land. Residential areas lie immediately north of the site. The western two-thirds of the study area is essentially flat and lies about 4950 feet above mean sea level (MSL). Alluvial fan deposits to the east cause a sharp rise in topography, to about 5010 feet MSL.

There are three municipal water supply wells in the area that are currently out of service. These are the San Jose well No. 3 (SJ-3), the San Jose well No. 9 (SJ-9), and SJ-6. SJ-3 is out of service due to mechanical problems and SJ-9 has never been equipped or used. SJ-6, which EPA has replaced with a new municipal well, has been out of service since 1980 due to groundwater contamination. The only wells known to be in active use are for light industrial or domestic purposes (ESI-1, A-2, and BC-2). There are two known domestic wells north of the site.

The six major industrial facilities involved in site investigations at the site are General Electric (formerly Air Force Plant 83), Chevron, Texaco, Duke City, Whitfield, and the Edmunds Street property (Figure 2). The owners of these properties have been identified as being potentially responsible for contamination of soil and groundwater in the vicinity of SJ-6.

Activities in the area are primarily industrial and agricultural. Solvents have been used for manufacturing in the plant that GE now owns since 1948. Petroleum products are handled at the Chevron and Texaco facilities. Also, a 6-inch petroleum products pipeline enters the Chevron property from the south, approximately parallel to Broadway. Secondary lines branch from this trunk to the east, towards the airport. The Duke City operation consists of handling and repackaging petroleum and related automotive products. At the Whitfield property, tank trucks were refueled, cleaned, and repaired. Various chemicals, including chlorinated solvents, were repackaged and shipped from the Edmunds Street property for approximately the past 20 years.

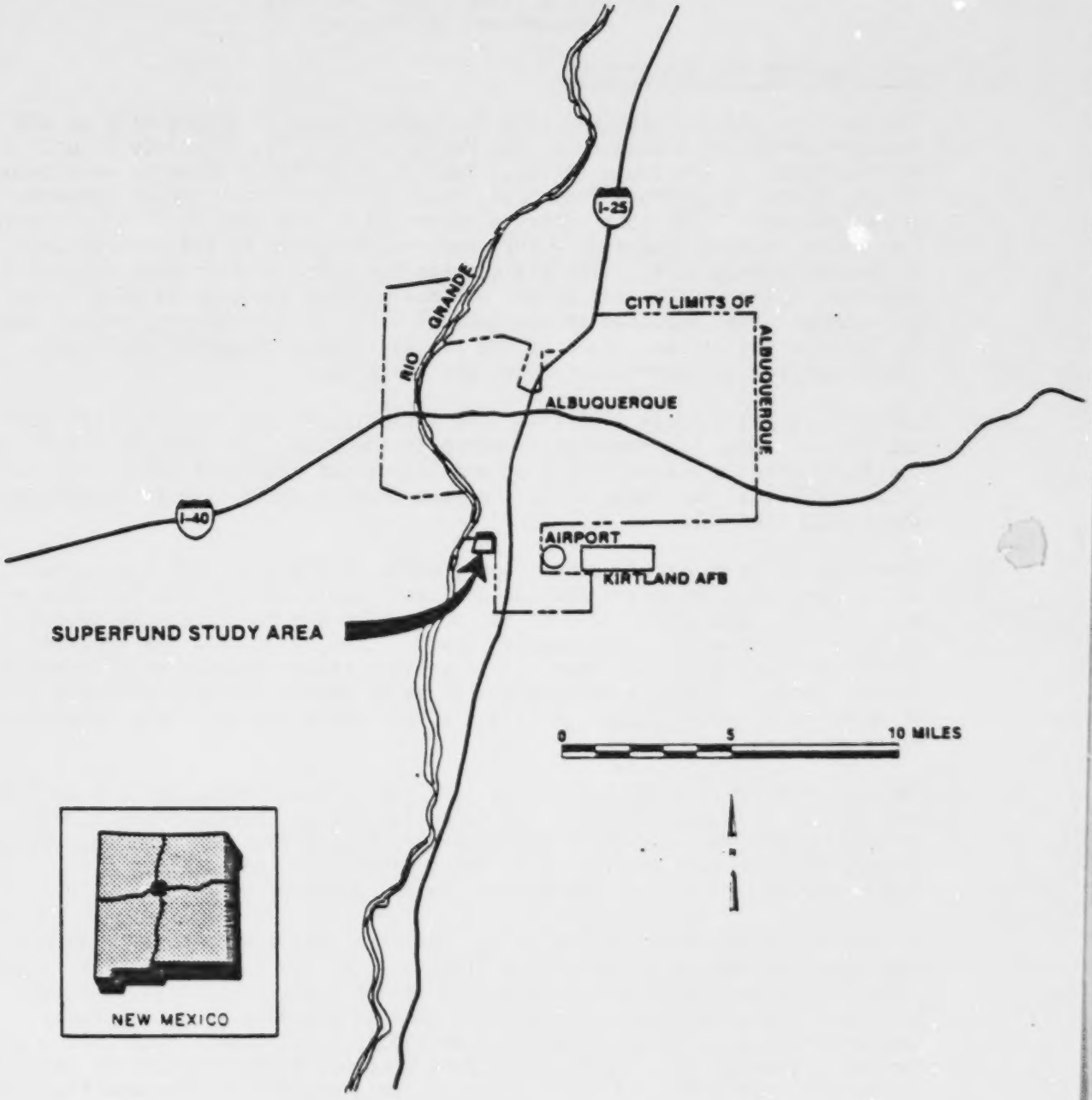

FIGURE 1
SUPERFUND STUDY ARE.
LOCATION MAP
SJ-6 SUPERFUND SITE

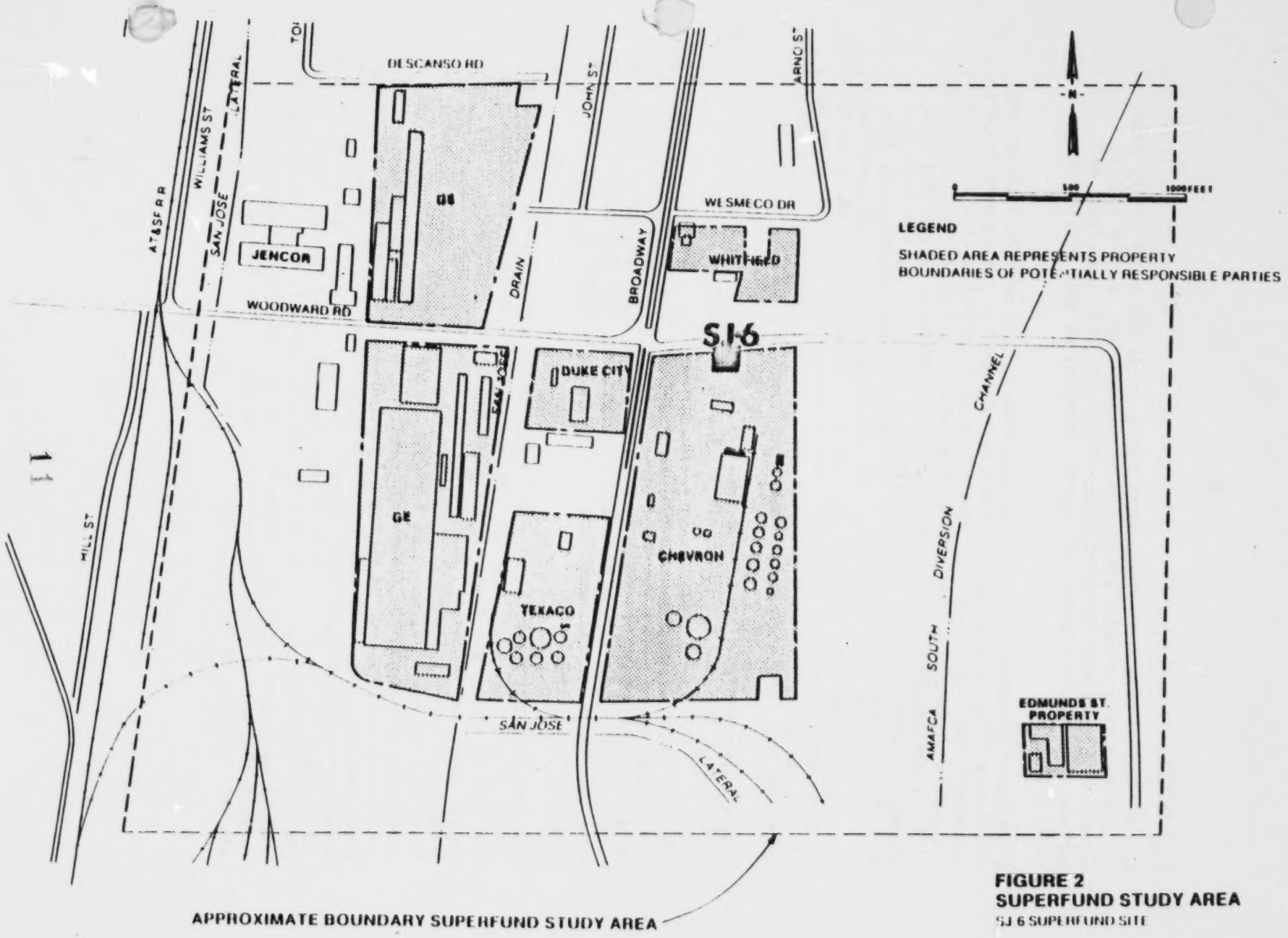

FIGURE 2
SUPERFUND STUDY AREA
SJ 6 SUPERFUND SITE

II. SITE HISTORY

By the 1940's, industrial development had begun in the South Valley area. The manufacturing of metal parts started around 1948. By the 1960's, organic chemicals were being handled. Presently, petroleum fuels and various chlorinated organics are stored, handled, or used within the study area.

Groundwater contamination was first suspected in 1978 when foul tastes and odors were noted in groundwater from a private well on the Edmunds property. Subsequent sampling showed that volatile organic compounds (VOC's) including 1,1-dichloroethane (1,1-DCA), 1,1-Dichloroethene (1,1-DCE), Trichloroetnane (TCA), Perchloroethene (PCE), and 1,1,1-Trichloroethene (1,1,1-TCE) were present in three municipal wells (Miles No. 1 (M-1), SJ-3, and SJ-6). Well M-1 was returned to service in 1981 after it was resampled and found to be contaminant free. Well SJ-3 had mechanical problems that prevented its return to service. Because low levels of solvents continued to be detected in groundwater from SJ-6, this well, which was put into service in the early 1960's, has been out of service since 1980. It was contamination in groundwater from SJ-6 that led to extensive studies of the site.

Studies have been performed by the New Mexico Environmental Improvement Division (NMEID), the EPA, and the potentially responsible parties.

NMEID collected background data on the study area uses, and collected soil and groundwater data. These studies formed the basis for subsequent EPA activities. Because of the potential threat to the Albuquerque municipal water supply, this site was designated as the State's highest priority and thus made eligible for study in 1982 under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

EPA conducted two phases of site characterization work, one in 1984 and 1985 (Phase I) and additional studies from November 1985 to April 1987 (Phase II). The initial study was broad-based. Information was gathered on soils, the vadose zone, surface water, sewers, drains, and groundwater. Details of tnis broad-based investigation can be found in the Phase I South Valley Remedial Investigation Report (1985). As a result of the initial EPA studies, the subsequent investigations (1985-1987) were directed towards examining groundwater quality and the hydrogeologic systems. During tnis second phase of study, extremely low detection limits were developed for groundwater analyses to accurately define the potential cancer risks at the site. Details of this study can be found in the SJ-6 Superfund Site Remedial Investigation Report (May, 1988). EPA also completed studies in 1984 to evaluate remedial measures to address the loss of SJ-6 water capacity. These studies resulted in a decision to replace SJ-6 with a new municipal well, the Burton No. 4. This well was put into service in July, 1988.

PRP investigations were done under EPA review but the results are not consistently comparable between individual PRP and EPA studies. This is due to differing field methods, analytical techniques, and investigation objectives. Comparable PRP data were used for the EPA May 1988 analysis and reports.

All of the previously mentioned reports are available for review at the administrative record repositories and are identified in the Administrative Record Index found in Appendix B. Investigations at the Edmunds Street facilities are continuing and should be complete in December 1988.

III. ENFORCEMENT HISTORY

Following the listing of the SJ-6 South Valley Superfund site on the National Priorities List, EPA entered into negotiations with present and former owners and/or operators of the six industrial properties. These negotiations resulted in a September 1984 agreement for investigations of the six properties. Investigations took place in 1984 and 1985 and were followed by a report on the results at each property. Further work was deemed necessary at two properties, Former Air Force Plant 83 (now the GE facility) and the Edmunds Street property. The additional work for both properties was completed in 1988 although all negotiations have not been received. Reports detailing results of this additional work are in different stages. The report for Former Air Force Plant 83 became available in August 1988. The results of the work at the Edmunds Street property has been split into two parts. The first portion dealing with groundwater became available in June 1988 and was followed by a Record of Decision on a contaminant plume moving east from the Edmunds Street property. The second part, dealing with contaminant sources, should be available in November 1988. Subsequent Records of Decision will be developed based on the results of both the Air Force and Edmunds Street reports. These decisions should be reached in September and December 1988, respectively.

IV. COMMUNITY RELATIONS HISTORY

Due to the possibility of contamination of the entire San Jose Wellfield, the South Valley site has received extensive media attention. However, because of the heavily industrialized nature of the site and the lack of exposure to contaminants, citizen concern has been limited to the immediate area.

Although no citizen groups have been formed to deal specifically with the problems posed by the South Valley site, several groups have expressed a general interest regarding overall environmental concerns in the Albuquerque area.

On July 6, 1988, EPA issued a press release and the Proposed Plan fact sheet for the SJ-6 segment. The press release was mailed to all news organizations in the Albuquerque area while the fact sheet was mailed to 142 residents and local officials. Extra copies of the fact sheet were provided to the three local repositories for distribution and display.

In accordance with CERCLA, Section 117, the press release and the fact sheet announced the comment period which began July 11, 1988, and ended September 2, 1988. A public meeting was held on July 21, 1988, in Albuquerque. Approximately 100 people from the area attended the meeting raising questions and making comments regarding the proposed plan. The Responsiveness Summary which outlines these comments as well as EPA's reply is included as Appendix C.

V. SCOPE OF RESPONSE ACTION WITHIN SITE STRATEGY

The scope of the SJ-6 Investigation, as discussed in Section II Site History, was to determine the source and extent of contaminants in groundwater that supplied SJ-6. This response action addresses only conditions in the general vicinity surrounding the PRP properties. It is not intended to address the principal threats at the site. Through remedial actions being initiated by EPA, notably the USAF/GE and the Edmunds St. decisions,the sources and emanating plumes of contamination will be addressed. These remedies are or will be described in separate documents. They are the Edmunds St. Groundwater Operable Unit (6/28/88), the Edmunds Street Source Control Operable Unit (12/88), and the Former Air Force Plant 83/ General Electric Record of Decision (9/88).

This remedial action is being selected in consideration of the other anticipated remedial actions as well as the completed EPA remedial action of replacing SJ-6 with a new municipal well.

VI. SITE CHARACTERISTICS - REMEDIAL INVESTIGATION RESULTS

GEOLOGIC SETTING

The study area lies within the Albuquerque Basin of central New Mexico. This Basin forms the middle section of the Rio Grande Valley, which extends north into Colorado and south into Texas, and is part of the Rio Grande Rift Belt. The rift consists of north-south interconnected structural basins, bordered on the east and west by uplifted fault blocks. Valley-fill sediments in the study area are composed of gravel, sand, silt, and clay, including alluvial fan and flood-plain deposits. As stated in Section I, the western portion of the site is essentially flat and is about 4950 ft. MSL. Except for the Edmunds Street facility, all the PRP properties lie in the western segment. To the east, where the Edmunds property is located, the topography rises sharply to about 5010 ft. due to the presence of alluvial fan deposits.

PHYSICAL CHARACTERISTICS AND EXTENT OF CONTAMINATION

There are five geologic units that generally correspond to hydrogeologic zones identified beneath the study area (Figure 3):

1. A Shallow Zone (approximately 0-35 ft)
2. A Silty Clay Aquitard (approximately 25-40 ft)
3. Alluvial Fan Deposits (approximately 0-120 ft)
4. An Intermediate Zone and (approximately 40-110 ft)
5. A Deep Zone (approximately 100 ft - several thousand ft)

These units appear to be dipping towards the east. Their associated geologic and hydraulic characteristics are briefly described below. The potential for migration and extent of contamination are also discussed.

Shallow Zone

The shallow groundwater producing zone, ranging in depth from 0 to 35 ft, is composed of fluvial sand and gravel deposited by the Rio Grande. This zone forms the surface layer of the western two-thirds of the study area. These sediments grade into alluvial fan deposits to the east. The Shallow Zone is unsaturated for about half of its thickness. The gradient can be determined only on a very local scale. However, for the square mile area it is highly variable and is daily and seasonally influenced, making flow direction for the overall site unpredictable. The vertical hydraulic conductivity ranges from 0.016 ft/day to 0.91 ft/day while the horizontal conductivity averages 210 ft/day.

Contamination in the Shallow Zone is concentrated beneath the Chevron, Texaco and GE properties. Total VOC accumulation is generally below 1000 ppb (parts per billion) but locally as high as 8598 ppb. Volatiles in the Shallow Zone are primarily petroleum compounds, except for the solvents detected beneath GE. Semi-volatile (pentachlorophenol) and inorganic concentrations are highest beneath Chevron. The presence of these compounds coincides with, and is probably caused by, the high petroleum concentrations. Because of the variable hydraulic gradient, the direction of contaminant migration can only be locally defined. For the total site, pathways cannot be conclusively determined.

Silty Clay Aquitard

This aquitard, descriptively named, is composed of silty clay, is approximately 15 feet in thickness, and is generally continuous in the western two thirds of the site. It interfingers with alluvial fan deposits and becomes discontinuous to the east. It is also discontinuous to the south of GE. The aquitard is saturated and has a low vertical hydraulic conductivity averaging 8×10^{-3} ft/day.

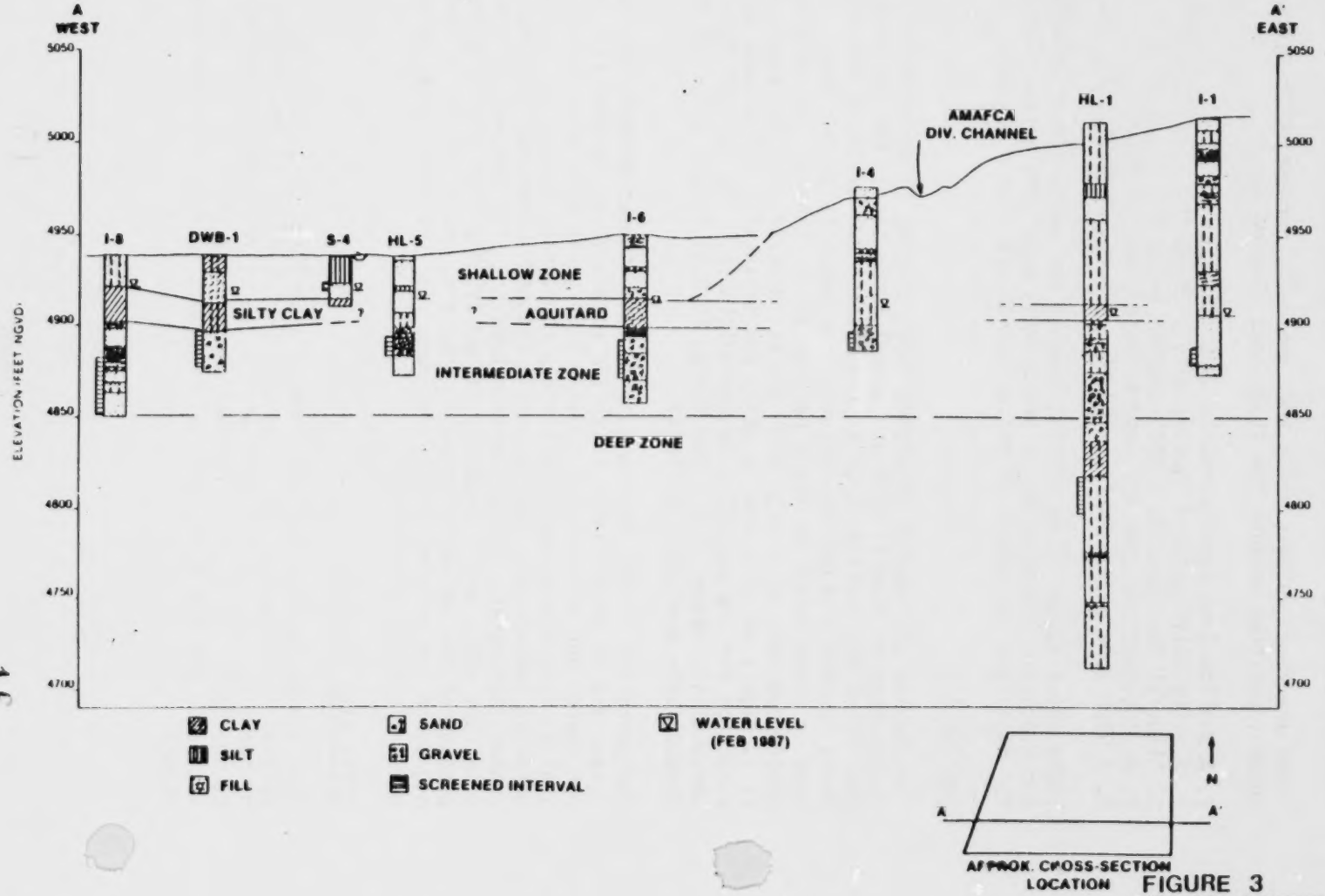

FIGURE 3
GEOLOGIC CROSS SECTI
SJ 6 SUPERFUND SITE

Contaminants generally migrate slowly through the aquitard.

However, discontinuities to the south of GE and laterally to the east provide a more direct, and probably more rapid, contaminant route to the Intermediate Zone. Groundwater samples were not collected from this zone.

Alluvial Fan Deposits

The topography rises about 50 ft from the Rio Grande floodplain towards the Sandia Mountains, to the east. Erosion of the Sandia Mountains has resulted in the deposition of alluvial fan sediments on the eastern margin of the site. The Alluvial Fan deposits are composed of gravel, sand, silt and clay. They extend from ground surface to a depth ranging from 75-120 ft. The hydraulic characteristics of these deposits are unknown, but because of the coarse-grained nature of the sediments they most likely have a high hydraulic conductivity. Except for the lowermost parts, they are largely unsaturated. The Edmunds Street property sits directly on these deposits.

Intermediate Zone

The Intermediate Zone consists of coarse-grained clastics that were deposited by channel action. The top of this aquifer ranges from about 30 ft below the surface in the west to about 50 ft below the surface to the east, dipping towards the alluvial fan deposits. The bottom of the zone is about 110 ft below the the surface. The hydraulic gradient is to the east and the hydraulic conductivity averages about 99 ft/day.

Groundwater analyses from 1987 show that, with respect to chlorinated solvents, groundwater meets Federal and State numerical criteria for drinking water and groundwater, respectively, in the general vicinity of SJ-6. Groundwater does not meet these criteria beneath and in plumes emanating from the PRP properties. The Federal health criteria (an acceptable risk range of 10^{-4} to 10^{-7} or 1 in 10,000 to 1 in 10,000,000 excess cancer cases) are also met in the vicinity of SJ-6. EPA sampled a total of 32 Intermediate Zone monitoring wells, in the vicinity of SJ-6 as well as on the PRP properties. In 22 of these wells, chlorinated solvents were below all State and Federal numerical criteria. In two of the 32 wells, all criteria were met but the State health standard (an acceptable risk of 10^{-5} or 1 in 100,000 excess cancer cases). The remaining 8 wells are associated with contaminants PRP properties. Although below numerical criteria, the concentrations of 5 ppb and 3 ppb of 1,1-Dichloroethene in groundwater from these two wells cause the State health criteria of 10^{-5} to be exceeded. High concentrations (8700 ppb benzene) of petroleum product were detected in a well immediately north of the Edmunds Street property, adjacent to an eastward trending branch of a petroleum products pipeline. Solvents and petroleum do not appear to be comingled in the Intermediate Zone, forming fairly distinct contaminant plumes.

The two nearest residential wells are about 1 block northeast of the site, and are thought to be screened in the Intermediate Zone. These wells were sampled in 1988 and contamination is below State and Federal numerical criteria and Federal health criteria. The State 10^{-5} criteria is exceeded in one well which is used solely for irrigation. The drinking and household water source for these individuals is the municipal water system. Several of the municipal water wells in the area, although contaminants had been detected in 1981, have been sampled approximately nine times through 1988, and no contaminants were detected. Recent sampling (1988) of municipal well SJ-1, SJ-6, and some PRP wells also show decreasing solvent concentrations, indicating trends of improvement.

Deep Zone

The Deep Zone consists primarily of fine-grained sand but is laterally and vertically heterogeneous. The Intermediate and Deep Zones, although hydraulically connected, were defined separately to emphasize the differences in lithology, primarily grain size and hydraulic characteristics. The Deep Zone is directly connected to the deeper aquifer that provides municipal water for the city of Albuquerque. The average horizontal conductivity in the upper parts of the Deep Zone (100 - 240 ft) is 17 ft/day and at the depth of SJ-6 (180-912 ft) it is 6.4 ft/day. Flow in the Deep Zone is currently towards the east.

Contaminants, other than those associated with PRP plumes, were not detected in groundwater from the upper parts of the Deep Zone. In groundwater discharged from SJ-6, 1,1-dichloroethene was detected that exceeds the State numerical criteria by 3 ppb and the Federal criteria by 1 ppb. The Federal health standard is met but the State 10^{-5} health criteria is exceeded.

Arsenic, which occurs naturally in the groundwater, contributes substantially to the total health threat.

The chlorinated solvents that were detected very likely do not represent contamination of the aquifer, but a local phenomena. SJ-6 was completed in 1963 and was near the end of its design life in 1981. Over this 20-year period, about 100 ft of sediment accumulated at the base of SJ-6, as typically occurs in sandy environments. Contaminants appear to have travelled down the SJ-6 borehole and adsorbed to this sediment. It now seems to be acting as a secondary source.

A more detailed description of the analytical results can be found in the Phase II SJ-6 South Valley Remedial Investigation Report (1988).

PETROLEUM EXCLUSION

Section 101(14) and 101(33) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 excludes petroleum from consideration as a hazardous pollutant under the Federal Superfund program. EPA's studies found significant levels of petroleum contamination in the Shallow and Intermediate Zones. The City of Albuquerque and the State of New Mexico may have legal authority that is absent at the Federal level to address this type of contamination. The information regarding petroleum contamination has, therefore, been turned over to State and City governments.

Hazardous substances that can be legally addressed under Superfund were not found to exceed health levels in the groundwater contaminated by petroleum. Therefore, petroleum contamination must be addressed solely by State and local authorities. The problems are being investigated under the jurisdiction of the Underground Storage Tank Trust Fund and the New Mexico Water Quality Criteria (Part I, Section 203).

POTENTIAL IMPACTS OF THE SITE ON HUMAN HEALTH AND THE ENVIRONMENT

Groundwater, on which the health assessment focused, is the primary media of concern in the vicinity of SJ-6. The potential risk from the site was comprehensively evaluated using the maximum reported contaminant concentrations from 1985 and 1987 groundwater data. The risk assessment shows that there are no exceedances of Federal health criteria and local exceedances of State health criteria. The lower bound for the Federal criteria is 10^{-4} which means that an individual will have a cancer risk of 1 case in 10,000 people, and the State criteria is 1 case in 100,000 for 10^{-5}.

Because of source control and contaminant plume remediation being implemented through other EPA actions, EPA anticipates that the low concentrations present at the site will be well below this criteria within a 70-year period, more likely within 5 years. It does not appear that the public will be exposed to any of these contaminants over a 70-year period and the risk posed by the compounds is negligible.

Chlorinated solvents in groundwater are below State and Federal numerical criteria in the vicinity of SJ-6. In 1987, 8 ppb of 1,1-dichloroethene were detected in groundwater from SJ-6 (State standard-5 ppb; Federal standard-7 ppb). This concentration and naturally occurring arsenic cause the New Mexico 10^{-5} health criteria to be exceeded. The chlorinated solvents detected in SJ-6 most likely do not represent groundwater comtamination, but contamination of sediments at the base of the well.

The Federal health standards are also met in the areas surrounding SJ-6, but the State health standard of no more than 1 in 100,000 (10^{-5}) excess cancer cases is exceeded in groundwater from two Intermediate Zone monitoring wells. The 1,1-DCE and arsenic detected in SJ-6 cause the New Mexico 10^{-5} health criteria to be violated. One residential well located northeast of the site, although below all other criteria, also exceeds the State health standard. Due to the above reasons, these contaminants do not appear to pose a significant health threat.

VII. ALTERNATIVE EVALUATION

DESCRIPTION OF ALTERNATIVES

In conformance with the National Contingency Plan, initial remedial approaches were screened to determine the most appropriate treatment methods and systems for dealing with groundwater contamination at the site (see the SJ-6 Superfund Site Feasibility Study (1988) for details of this evaluation). EPA anticipates that source control and groundwater remediation will be implemented through Enforcement initiatives. These anticipated actions were considered during development of the groundwater remediation alternatives. They also formed the basis for definition of EPA's target area in the vicinity of SJ-6. From screening of the initial remedial alternatives, eight were selected for detailed analysis. Of these eight, six utilize the same treatment processes but the rate and configuration of pumping wells and the discharge option for treated water are varied. As previously mentioned, these alternatives deal only with groundwater contamination in the vicinity of SJ-6. Each is summarized below:

Alternative 1 - No Action

This alternative consists of monitoring groundwater during and following implementation of source control and groundwater remediation by the PRPs. The No-Action alternative is included to evaluate the present degree of threat to public health and the environment and as a comparison to other alternatives. Included in the No-Action alternative is groundwater monitoring for 30 years and access restrictions to the Shallow and Intermediate Zones. Access restrictions will most likely consist of well construction methods that prevent cross-contamination of zones and screened intervals that are below the top of the Deep Zone. It includes monitoring well construction and groundwater analyses. The cost of this alternative is approximately $1.7 million.

Alternative 2 - Sealing Abandoned Wells, Groundwater Monitoring, and Access Restrictions

This alternative consists of cleaning out and sealing abandoned wells that are acting as conduits for contaminant migration. Even though contaminants at low concentrations migrate vertically to underlying zones through the sediments themselves, conditions in SJ-6 suggest that the fastest and primary route for contaminant migration is through abandoned wells at the site. Sixteen abandoned wells have been identified but it is not clear if they are all acting as conduits. These wells will be evaluated as part of remedial design. Two wells that have a greater potential to act as conduits are SJ-6 and a well located on the USAF/GE property. At the base of SJ-6, about 100 ft of sediment have accumulated. Contaminants have very likely adsorbed to these sediments. As part of this alternative, these sediments will be removed. If after sediment removal, additional testing shows that contamination above standard persists, this contamintion will be further evaluated. The integrity of other abandoned wells will be checked before they are sealed.

Groundwater quality will be monitored during and after implementation of remedial action, for a 30 year period. Access restrictions regarding well construction specifications and depth of completion will also be imposed through the State Engineer's office. These will apply only to the construction of new wells in the area and will not affect existing wells. Monitoring wells will be installed in close proximity to the existing residential wells to ensure protection of the public health. Access restrictions will not prevent the use of groundwater in the area. They will ensure that wells are constructed to prevent cross-contamination of zones and that they are completed at a great enough depth to prevent exposure to any contaminants, whether they be petroleum or chlorinated solvents. The cost for this alternative is about $4 million.

Alternatives 3 through 8 - Pump and Treat Alternatives

These alternatives involve the use of extraction wells for groundwater containment and collection with groundwater treatment using conventional technologies. Pumping alternatives would create a vertical hydraulic gradient that would draw petroleum from the Shallow Zone to the deeper zones. To prevent degradation of the deeper zones by petroleum, it would be necessary to remove floating petroleum product found in the Shallow Zone. To do this, a separator would be used followed by an adsorption system to filter any residue. Air stripping would remove volatiles, the emissions of which would be passed through an activated carbon filter.

Semi-volatiles can be removed using aqueous phase carbon absorption followed by an oxidizing process with a greensand filter to remove metals. Discharge of treated groundwater would be either to surface water or to the city water supply system.

The primary differences between the alternatives are in pumping rate, configuration of wells, and point of discharge. Recovery in the Shallow Zone could be done with either a number of small wells or a trench. Recovery in the Deep Zone could be done by pumping SJ-6 or installing new deep wells for extraction.

EVALUATION CRITERIA

To ensure compliance with Section 121(a) through (d) of the CERCLA, the following nine factors were considered in selecting a remedy for the SJ-6 portion of the site.

1. Consistency with other Environmental Laws (ARARs).

In determining appropriate remedial actions at the SJ-6 site, consideration was given to the requirements of other Federal and State environmental laws, in addition to CERCLA as amended by SARA. Primary consideration was given to attaining applicable or relevant and appropriate regulations (ARARs) required by Federal and State government. These are listed in Table 1. Not all Federal and State environmental laws and regulations are applicable to each Superfund response action.

TABLE 1

APPLICABLE OR RELEVANT AND APPROPRIATE ENVIRONMENTAL LAWS AND REGULATIONS
SOUTH VALLEY SJ-6 SUPERFUND SITE

Law or Regulation	Analysis	Implementation of Alternative meets Applicable and Relevant and Appropriate Regulations for Alternative Number							
		1	2	3	4	5	6	7	8
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	Implementation of this alternative is consistent with appropriate remedial actions and removal operations.	A	A	A	A	A	A	A	A
Superfund Amendments and Reauthorization Act (SARA)	Implementation of this alternative meets the preferences of SARA (reduction of toxicity, volume, and mobility)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
National Primary Drinking Water Standards	Establishes drinking-water standards for public water systems.	A	A	A	A	A	A	A	A
National Secondary Drinking Water Standards	Establishes standards for aesthetic qualities of public H_2O systems.	R	R	R	R	R	R	R	R
Identification and Listing of Hazardous Waste	Are relevant and appropriate if there is hazardous solid or liquid residues from treatment plant.	N/A	R	R	R	R	R	R	R
Standards Applicable to Generators of Hazardous Waste	Applicable if disposal of hazardous waste residues associated with treatment must be transported offsite.	N/A	A	A	A	A	A	A	A
Standards Applicable to Owners/Operators of Hazardous Waste Treatment, Storage and Disposal Facilities	Applicable to treatment facility.	N/A	N/A	A	A	A	A	A	A

A - Applicable
R - Relevent and appropriate

No - Does not meet the requirements of the law
N/A - Not an ARAR

APPLICABLE OR RELEVANT AND APPROPRIATE ENVIRONMENTAL LAWS AND REGULATIONS
SOUTH VALLEY SJ-6 SUPERFUND SITE

Law or Regulation	Analysis	Implementation of Alternative meets Applicable and Relevant and Appropriate Regulations for Alternative Number							
		1	2	3	4	5	6	7	8
Resource Conservation and Recovery Act (RCRA)	Implementation of alternative will be consistent with RCRA regulations.	N/A	A	A	A	A	A	A	A
National Emission Standard for Hazardous Air Pollutants	Some portions of 40 CFR 61 would be relevant and appropriate to off-gas emissions from air strippers.	N/A	R	R	R	R	R	R	R
National Ambient Air Quality Criteria	All proposed alternatives need to provide adequate level of workers protection during remediation.	R	R	R	R	R	R	R	R
Hazardous Materials Transportation Regulations	Applicable if any alternative requires the offsite transportation of hazardous materials.	N/A	A	A	A	A	A	A	A

A - Applicable
R - Relevent and appropriate
Yes - Meet the requirements of the law
No - Does not meet the requirements of the law
N/A - Not an ARAR

TABLE 1

APPLICABLE OR RELEVANT AND APPROPRIATE ENVIRONMENTAL LAWS AND REGULATIONS
SOUTH VALLEY SJ-6 SUPERFUND SITE

Law or Regulation	Analysis	Implementation of Alternative meets Applicable and Relevant and Appropriate Regulations for Alternative Number							
		1	2	3	4	5	6	7	8
New Mexico Toxic Pollutant Criteria and Groundwater Standards	Sets groundwater standards for State of New Mexico.	A	A	A	A	A	A	A	A
New Mexico Statutes, Water Law	ARAR for installation of monitoring and/or extraction wells.	A	A	A	A	A	A	A	A
General Requirements	ARAR for point discharge to the Rio Grande.	N/A	A	A	A	A	A	A	A
Underground Injection Control	ARAR for both reinjection wells and abandonment of existing wells if part of the selected remedy.	N/A	A	A	A	A	A	A	A
New Mexico Air Quality Control Act	ARAR for treatment effluent to the air.	N/A	N/A	A	A	A	A	A	A
Air Quality Control Regulation 702	Draft regulations. Relevant and appropriate for treatment plant emissions.	N/A	N/A	R	R	R	R	R	R

A - Applicable
R - Relevent and appropriate
Yes - Meet the requirements of the law
No - Does not meet the requirements of the law
N/A - Not an ARAR

The most significant decision-making criteria were the Safe Drinking Water Act Primary Drinking Water Standards, the New Mexico Part 3-103 Groundwater Standards, and the New Mexico Part 1-101 UU Toxic Pollutant Criteria.

The 1-101 UU criteria mandates that any water contaminant or combination of listed water pollutants that creates a lifetime risk of more than one cancer per 100,000 exposed persons is a toxic pollutant. Compounds at the SJ-6 site that create this level of risk are 1,1-dichloroethene, benzene, and arsenic. The benzene is associated solely with petroleum. The numerical criteria for these compounds are as follows:

	Safe Drinking Water Act	New Mexico Water Quality Criteria
1,1-DCE	7 parts per billion	5 parts per billion
Benzene	5 parts per billion	10 parts per billion
Arsenic	50 parts per billion	100 parts per billion

2. Reduction of Toxicity, Mobility or Volume

The degree to which alternatives employ treatment that reduces toxicity, mobility, or volume were assessed. Relevant factors were:

- o The treatment processes the remedies employ and materials they will treat;
- o The amount of hazardous materials that will be destroyed;
- o The degree of expected reduction in toxicity, mobility and volume;
- o The degree to which the treatment is irreversible;
- o The residuals that will remain following treatment, considering the persistence, toxicity, mobility, and propensity for bioaccumulation of such hazardous substances and their constituents.

3. Short-term Effectiveness

The short-term effectiveness of alternatives was assessed, considering appropriate factors among the following:

- o Magnitude of reduction of existing risks;

- o Short-term risks that might be posed to the community, workers, or the environment during implementation of an alternative, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;

- o Time until full protection is achieved.

4. Long-term Effectiveness and Permanence.

Alternatives were assessed for the long-term effectiveness and permanence they afford along with the degree of certainty that the remedy will prove successful. Factors considered were:

- o Magnitude of residual risks in terms of amounts and concentrations of waste remaining following implementation of a remedial action, considering the persistence, toxicity, mobility, and propensity to bioaccumulate such hazardous substances;

- o Type and degree of long-term management required, including monitoring and operation and maintenance;

- o Potential for exposure of human and environmental receptors to remaining waste considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;

- o Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated wastes and residuals;

- o Potential need for replacement of the remedy.

5. Implementability.

The ease or difficulty of implementing the alternatives were assessed by considering the following types of factors:

- o Degree of difficulty associated with constructing the technology;

- o Expected operational reliability of the technologies;

- o Need to coordinate with and obtain necessary approvals and permits (e.g., NPDES, Dredge and Fill Permits for off-site actions) from other offices and agencies;

- o Availability of necessary equipment and specialists;
- o Available capacity and location of needed treatment, storage, and disposal services.

6. Cost.

The costs that were assessed include the following:

- o Capital cost;
- o Operation and maintenance costs;
- o Net present value of capital and O & M costs;
- o Potential future remedial action costs.

7. Community Acceptance.

This assessment considered:

- o Components of the alternatives that the community supports;
- o Features of the alternatives about which the community has reservations;
- o Elements of the alternatives which the community strongly opposes.

8. State Acceptance.

Evaluation factors included assessments of:

- o Components of the alternatives the State supports;
- o Features of the alternatives about which the State has reservations;
- o Elements of the alternatives under consideration that the State strongly opposes.

9. Overall Protection of Human Health and the Environment.

Following analysis of the remedial options against individual evaluation criterion, the alternatives were assessed from the standpoint of whether they provide adequate protection of human health and the environment considering the multiple criteria.

EPA is also directed by SARA to give preference to remedial actions that utilize treatment to remove contaminants from the environment. Off-site transport and disposal without treatment is the least preferred option where practicable treatment technologies are available.

EVALUATION OF ALTERNATIVES

In the vicinity of SJ-6, all Federal and State numerical criteria are met with the three previously described exceptions. All Federal health criteria are also met. The three exceptions to these statements are: Federal numerical criteria are exceeded in SJ-6 by 3 ppb of 1,1-DCE and the State health criteria is slightly exceeded in two Intermediate Zone monitoring wells.

The contaminants detected in SJ-6 are not viewed as an aquifer contamination problem for the reasons discussed in the Physical Characteristics and Extent of Contamination section of Part VI - SITE CHARACTERISTICS. Although the New Mexico health standard is locally exceeded in these two wells, the 22 wells that are below all State and Federal standards show that this is a local problem. This will be dealt with in other decisions regarding the site. Arsenic detected in SJ-6 is naturally occurring in groundwater of this region. Because it is naturally occurring, arsenic is not considered to be a Superfund contaminant in this instance. The City is aware of and plans for this problem.

This evaluation intends only to address conditions in the vicinity of SJ-6. It does not intend to address the principal threats at the site, which are the sources on, and the associated groundwater plumes emanating from, the PRP properties. The principal threats are being addressed in separate decisions. These decisions are the Edmunds Street Groundwater Operable Unit (6/28/88), the Edmunds Street Source Control Operable Unit (1st qtr/89), and the Former Air Force Plant 83/ General Electric Record of Decision (9/88).

To ensure compliance with Section 121 (a) through (d) of CERCLA, the following nine criteria were considered in selecting a remedy for the SJ-6 portion of the site:

1. Applicable or Relevant and Appropriate State and Federal Standards (ARARs)

   a. No Action. This option would leave a "halo" of groundwater contamination at the base of the SJ-6 well which would not meet the New Mexico 10^{-5} health criteria for arsenic and solvents. It is possible that natural attenuation would eventually result in attainment of standards but this would take several years.

b. Sealing Abandoned Wells, Groundwater Monitoring, Access Restrictions. This would include the excavation and disposal of sediments at the base of the SJ-6 borehole which EPA has judged to be the source of elevated solvent contamination. This remedy would therefore attain all applicable or relevant and appropriate standards.

c. Pump and Treat Alternatives. All of these remedies would eventually cleanse the aquifer near SJ-6 to meet standards. However, active pumping from the SJ-6 well and vicinity could interfere with attainment of standards by the pumping systems proposed for the GE/USAF and Edmunds Street portions of the site.

2. Reduction of Toxicity, Mobility, and Volume

a. No Action. Because the major sources of contamination will be removed by decisions for other areas of the site, residual contamination will become virtually nondetectable. Through natural attenuation, the toxicity, volume, and consequently the mobility will be reduced. This alternative would not prevent the vertical migration and accumulation of contaminants through boreholes. In this alternative petroleum contamination is not addressed.

b. Sealing Abandoned Wells, etc. Toxicity and volume as well as mobility would be reduced with this alternative. The potential threat to the deeper zones, which supply drinking water to the city of Albuquerque, would be prevented. This alternative would have the added benefit in the short-term of preventing vertical migration from the Shallow Zone to deeper aquifers. Groundwater monitoring would also be performed to ensure remedy effectiveness.

c. Pump and Treat Alternatives. All of these alternatives would effectively reduce toxicity, mobility, and volume of contaminated groundwater by creating a hydraulic capture zone and implementing groundwater treatment. Since contaminants are currently below numerical standards, these actions would quickly remediate residual solvents.

3. Short-Term Effectiveness

a. No Action. Since solvent contamination is currently below standards in the vicinity of SJ-6, or is being otherwise addressed, the No-Action alternative would be effective in the short term. In this alternative, as in all others, groundwater monitoring would ensure the effectiveness of the remedy.

b. Sealing Abandoned Wells,etc., would be as effective as the No-Action alternative in the short-term since construction of this remedy would not begin for at least eighteen months. This time is required for development of design plans and bid specifications.

c. Pump and Treat alternatives would have the same short-term effectiveness as the No-Action for the same reasons as Alternative 2, Sealing Abandoned Wells.

4. Long-Term Effectiveness

a. No Action. Although natural attenuation would reduce existing levels of contamination, abandoned and open boreholes would remain a potential conduit for future pollution. This option is judged the least effective in the long-term.

b. Sealing Abandoned Wells. This alternative is judged most effective in the long term because it would:

i. restrict pathways for future contamination through boreholes,
ii. remove contaminant-bearing sediments that may act as a continuing source of contamination, and,
iii. encourage and be consistent with future State and City well-head and aquifer protection programs.

c. Pump and Treat Alternatives would, similar to the Well-Sealing option, be effective near SJ-6.

5. Implementability

a. No Action. This criterion is not applicable for the No Action remedy described in this Record of Decision.

b. Sealing Abandoned Wells. Technology to implement this remedy is readily available and is highly implementable. State and Local systems to protect the aquifer in the future are not yet in place but are judged to be feasible based on well-head protection programs in other parts of the country.

c. Pump and Treat Remedies. Conventional methods and equipment are readily available for all of the pump and treat remedies. The technologies are straight-forward and easily implemented. Trenching for groundwater recovery from the Shallow Zone would present problems due to the difficulty of obtaining the required physical access.

6. Cost

Cost evaluation, detailed in the Feasibility Study for this Record of Decision, are summarized below ($ millions):

	Capital Costs	Annual O & M	Total Present Worth
a. No Action	$0.4	$0.3	$1.7
b. Well Sealing, etc.	$0.9	$0.3	$4.0
c. Pump & Treat alts.	$19.0 - $33.0	$1.6 - $2.3	$43.0 - $ $69.0

7. Community Acceptance

Because the South Valley San Jose site is complex in terms of the kinds of contaminants, hydrogeology, and numbers of potentially responsible parties, there was a good deal of public confusion attendant to EPA's proposal for the SJ-6 site remedy. There also was confusion regarding the impact of the petroleum exclusion. The public seems to believe that contaminants were present above standards and are pervasive throughout the site area, despite EPA's data to the contrary. Owners of residential wells stated that their water was not fit for consumption because it looked, tasted and smelled foul, you could see a brown layer in it, and it caused health problems for their children.

To ensure the public was fully involved and informed, EPA extended the SJ-6 comment period from the required 21 days to over 50 days. This added time allowed the remedy for the GE/USAF portion of the site to be presented and explained as a necessary component of overall site remediation. It also allowed for two public meetings and a workshop to be held regarding the site and a public workshop regarding the availability of Technical Assistance Grants to be held.

All comments and questions received during the public comment period are answered in writing in the Responsiveness Summary. This document will be disseminated to all interested parties. It is likely, however, that many local residents will continue to believe that EPA is "walking away" from the pollution problems in the San Jose area. Follow-up information bulletins and public workshops will therefore be offered to inform residents of the progress of remediation.

8. State Acceptance

The Environmental Improvement Division has been a principal reviewer of all studies and evaluations conducted at this site. At the July 21, 1988 public meeting, representatives of the EID announced that they strongly objected to EPA's proposed remedy. After review and discussion of the viability of options and EPA's public proposal regarding the GE/USAF site, the EID has modified their position.

In a letter dated September 13, 1988, the EID indicated that the proposed remedy for SJ-6 might be supported pending a review of the final decision for the GE/USAF portion of the site.

9. Overall Protection of Human Health and the Environment.

a. No Action. While solvent contamination is not now a threat, the 16 abandoned and open boreholes near SJ-6 pose a threat to the environment and the health of water users.

b. Sealing Abandoned Wells, etc. This remedy would provide longterm protection to the environment and human health because contaminants at the base of SJ-6 will be removed and physical (i.e. plugging) as well as institutional controls will be put in place.

c. Pump and Treat Alternatives. At most, these alternatives would equal the protection provided by sealing abandoned wells and groundwater monitoring. Based on EPA's most recent sampling event (1987), groundwater is below all numerical criteria for contaminants. It is also below all Federal health criteria. There are two exceedances of the State Health criteria. In view of these very localized, very low concentrations, the State health criteria will not be exceeded for any length of time. There will be no added benefit to implementing a pump and treat alternative.

VIII. SELECTED REMEDY: SEALING ABANDONED WELLS, GROUNDWATER MONITORING AND ACCESS RESTRICTIONS

RATIONALE

This remedy was considered superior to the No Action alternative because:

1. It provides for removal of contaminants at the base of the well which may serve as a source of contamination for drinking water supplies.

2. It greatly reduces the possibility that existing well well become future conduits of pollution to drinking water supplies.

3. It provides for long-term monitoring to ensure that the physical measures undertaken and institutional controls enacted do, in fact, work as expected.

The pumping and treatment remedies were rejected over the selected remedy for the following reasons:

1. They would result in negligible decreases in site contamination in the vicinity of SJ-6 over the plugging remedy at far greater cost ($4 million compared to $70 million).

2. Pumping water from SJ-6 could cause needless interference with pumping regimes for treatment efforts at the GE/USAF and Edmunds street properties.

The expenditure of additional funds to implement a pump and treat remedy at the SJ-6 site would not result in significant additional protection of human health or the environment. Sealing abandoned wells, groundwater monitoring, and assessing conditions after 5 years will protect public health and the environment. The State concurs with this remedy if the other site decisions are implemented.

DOCUMENTATION OF SIGNIFICANT CHANGES

No significant changes to this Record of Decision were necessary from the Proposed Plan of July 1988.

OPERATION AND MAINTENANCE (O & M)

The need for future operation and maintenance will be minimal since source control remediation will be implemented through other actions. These actions are outlined in the respective Records of Decision for the Edmunds Street Property and the USAF/GE facility. Site operation and maintenance will include groundwater monitoring, any repair of monitoring wells that may be required, and periodic site inspections. Operation and maintenance will be the responsibilfty of the State of New Mexico 1 year after the remedy is implemented.

FUTURE ACTIONS

A Design Review Committee wil be created within 90 days after this Record of Decision is signed. This committee will include representatives of EPA, NMEID, the City of Albuquerque, and involved private parties. Its function will be as a groundwater management team, to ensure that remedial designs and action at the San Jose site are hydraulically integrated. At the very least, this committee will make certain that respective actions do not negatively impact each other. The statutory authority for the respective actions will rest with the appropriate regulatory body.

The proposed remedial action for the site is considered permanent. However, If there are significant increases in concentrations of contaminants previously detected at the site, appropriate actions will be assessed.

SCHEDULE

Approved remedial action (sign ROD)	September 1988
Start remedial design	January 1989
Complete design	July 1989
Start remedial action	August 1989

NEW MEXICO
HEALTH AND ENVIRONMENT
DEPARTMENT

Post Office Box 968
Santa Fe, New Mexico 87504-0968

ENVIRONMENTAL IMPROVEMENT DIVISION

Richard Mitzelfelt
Director

GARREY CARRUTHERS
Governor
Carla Muth
Secretary
Michael J. Burkhart
Deputy Secretary

September 30, 1988

Mr. Allyn Davis, Director (6H)
Hazardous Waste Management Division
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Dallas, Texas 75202-2733

Dear Mr. Davis:

While various details still need to be resolved during Remedial Design, EID concurs with the conceptual remedy outlined in the draft Record of Decision for the San Jose 6 Operable Unit of the San Jose Superfund site. This concurrence is conditional on the timely implementation of the remedy selected in the GE/USAF Record of Decision. As with other individual remedies selected for operable units at the San Jose site, the San Jose 6 remedy alone does not address all potential threats to public health. However, this remedy will play a part in the overall strategy to do so.

Creation of a Design Review Committee, mandated in the San Jose 6 Record of Decision, will ensure that this and other remedies at the San Jose site are coordinated to achieve site cleanup. In addition, a review by EPA of environmental conditions and Superfund remedies after five years is also required under this Record of Decision. EID will work with EPA to evaluate additional remedial actions if ground-water contamination above standards is identified at this time.

Sincerely,

Richard Mitzelfelt
Director

EQUAL OPPORTUNITY EMPLOYER

APPENDIX B

SAN JOSE WELL #6
SOUTH VALLEY SUPERFUND SITE
COMMUNITY RELATIONS RESPONSIVENESS SUMMARY

This Community Relations Responsiveness Summary has been prepared to provide written responses to comments submitted regarding the proposed plan of action at San Jose Well #6 portion of the South Valley hazardous waste site. The summary is divided into two sections:

I. Background of Community Involvement

Due to the possibility of contamination of the entire San Jose Wellfield, the South Valley site has received extensive media attention.

Although no citizen groups have been formed to deal specifically with the problems posed by the South Valley site, several groups have expressed a general interest regarding overall environmental concerns in the Albuquerque area.

The press release and Proposed Plan fact sheet announcing the public comment period and public meeting were distributed on July 6, 1988. The comment period began on July 11, 1988 and was extended until September 2, 1988. A public meeting was held for the area residents and local officials on July 21, 1988 at the Radisson Hotel. The purpose of this meeting was to explain the results of the remedial investigation and to outline the various alternatives presented in the Feasibility Study. Approximately 100 people from the area attended the meeting, and 25 residents made oral statements or asked questions. Eight written comments or questions were received.

Section II: Summary of Major Comments Received.

During the public comment period, there were comments/questions (oral and written) regarding several issues. These are summarized on the following pages.

Responsiveness Summary
SJ-6 South Valley

1. Comment: EPA failed to consider CERCLA §118 which requires that a high priority be given to drinking water supplies. A drinking water supply is contaminated and drinking water wells have been closed.

   Response: EPA disagrees. Incorrect. The vulnerability of this aquifer system and its importance as a resource is documented in the Phase I Remedial Investigation (RI) report. The primary goal of the Phase II remedial investigation was quantification of the potential threat to groundwater resources. EPA has given this aquifer system the highest priority possible by viewing it as a sole-source system.

   SJ-6 is the only well that remains out of service due to contamination. Concentrations in this well have decreased 50% since 1981. The standard for 1, 1-DCE was exceeded by 3 parts per billion (ppb) in the last sampling event, but this most likely does not indicate groundwater contamination. It appears to be the result of conditions in the wellbore. All other municipal wells within or in close proximity to the site have been recently sampled and are of drinking water quality.

   EPA has fully met the requirements of CERCLA §118.

2. Comment: EPA has violated CERCLA §121 cleanup standards in its selection of an alternative which will not comply with applicable state standards, specifically New Mexico Water Quality Criteria (NMWQC) Regulations 3-103. A, B, and C and 1-101.UU.

   Response: EPA disagrees. The selected remedy will meet all numerical standards of 3-103 A,B, and C. The New Mexico Environmental Improvement Division (NMEID) 1-101.U.U. criteria defines as acceptable a maximum, excess cancer risk of 1 in 100,000 cases. This standard is locally being exceeded but the excess cancer risk falls within EPA's acceptable range of 1 in 10,000 cases. EPA has carefully considered the impact of these local State criteria exceedances within the overall site strategy. Source control and remediation in other EPA initiated actions will rapidly allow attenuation of these areas. These do not pose a public health threat.

Within the overall site strategy, comprehensive remediation of sources and contamination emanating from the sources is being undertaken.

3. Comment: EPA's cost analysis is problematic in that it does not include costs for procuring alternate water supplies nor does it consider the value of treated groundwater. Costs for the required 5 year review of Superfund sites at which hazardous wastes remain onsite are also not included.

   Response: EPA, with consultation from the City of Albuquerque and NMEID, designed and constructed a new municipal well to replace SJ-6 at a cost of $1 million. The new well, the Burton No. 4, has a greater capacity than the abandoned San Jose 6 well and is more than adequate to replace the lost water supply.

   The statutory 5-year review is required only at sites where contaminants remain above health-based standards. This is not the situation at the SJ-6 site. Costs for the proposed alternative include quarterly sampling of 21 monitoring wells, quarterly sampling for 4 wells near sewers, and analysis of 500 samples for a 30-year period. Any changes in site conditions will no doubt be detected with this sampling approach. In addition, to address concerns expressed by the state, a review of environmental data will be conducted after the first 5 years have elapsed.

4. Comments: There is an invalid presumption that petroleum remediation will not be undertaken, resulting in excess cost and time estimates for petroleum remediation vs. solvents.

   Response: This is incorrect. The cost analysis addresses petroleum-related contamination as it pertains to, or interferes with, various engineering aspects of remediation. Weighted averages of contaminant concentrations were used in order to deemphasize high concentrations of petroleum. Since petroleum would be withdrawn as a result of any active remediation, the treatment system had to be designed accordingly. Time for remediation had to be estimated in the same way. This is a realistic approach to the site and does not overestimate the impact of petroleum on remediation.

5. Comment: EPA's proposal for access restrictions to groundwater use and deed notices violates CERCLA's general requirements and is legally questionable.

   Response: This is incorrect. EPA is meeting the preference for treatment and reduction of contaminants in the comprehensive site approach.

   Remediation and source control is being implemented in several of the site subelements that will impact conditions over the entire area.

   Access restrictions, which will consist of well construction to prevent cross-contamination and completion at depths at least greater than 200 ft. would be implemented under any alternative except No-Action. The primary reason for these restrictions is prevention of borehole migration and any potential exposure until source control is effective.

   These restrictions will be implemented through the State Engineers office permitting procedure (Section 72-12-1 of New Mexico Statutes) that is required for installation and use of all wells. The restrictions will not cause water resources to be lost.

6. Comment: EPA has misapplied CERCLAs petroleum exclusion and has refused to consider comingled contaminants.

   Response: There do not appear to be any comingled contaminants at the site. The language of the petroleum exclusion is clear. Under Superfund, EPA can treat comingled contamination. If, at some point, only petroleum is being withdrawn from the groundwater system and treated, EPA can no longer fund this Remediation. Under these circumstances, EPA will not treat the petroleum contamination back to the source.

7. Comment: EPA has failed to withdraw the outstanding RCRA 3013 Administrative Orders. EPA's ambivalence and failure to withdraw these orders has hurt the State's enforcement efforts.

Response: This is incorrect. EPA has received one informal request to withdraw the RCRA 3013 Orders. These orders require an entity to conduct investigations for suspected contamination. This was an oral request from Mr. Pete Maggiore of the EID UST program on 9/1/88, to release Duke City Distributing from its order. EPA responded that releasing Duke City would be no problem if NMEID Superfund concurrence was obtained. In all other prior conversations EID has requested that EPA retain these orders to aid their enforcement efforts.

8. Comment: The public comment period for the San Jose 6 proposed plan should be extended until after a decision on the GE/USAF property is reached. If the GE/USAF remedy is unacceptable, this will allow no time for comment on SJ-6.

Response: EPA disagrees. Degree of remediation is not negotiated with responsible parties and each Record of Decision that EPA signs must comply with all provisions of the Superfund law. The comment period for SJ-6 was purposely extend from the required 21 days to over 50 days to endure the proposed remedies for both portions of the site were before the public at the same time.

9. Comment: The proposed plan will not prevent the migration of contaminants horizontally or vertically.

Response: Sealing abandoned wells will significantly reduce downward migration of water through abandoned wells. Abandoned wells should be sealed as a matter of practice.

10. Comment: Flow rates documented in the RI make it obvious that additional municipal and private wells are imminently threatened.

Response: EPA disagrees. Flow rates in the RI are for groundwater only. They do not account for movement of contaminants in the groundwater. Data from the Edmund's Street study document the eastern margin of the plume as being just east of I-25. Sampling of nearby municipal wells (1988) show that these wells are not contaminated.

11. Comment: The deepest (and among the most troubling) contamination at the site is not even mentioned in the proposed plan. The RI determined that water pumped from SJ-6 remains unfit for human consumption because of contaminated groundwater drawn from the bottom of the screened zone.

Response: EPA disagrees. All deep wells with the exception of SJ-6 show no evidence of contamination. Contaminants have apparently adsorbed to the 100 ft of accumulated sediment at the base of SJ-6. These sediments are most likely acting as a secondary source rather than the deep zone being regionally contaminated.

Solvent concentrations in groundwater from SJ-6 have decreased from 1981 to 1988 by 50%, supporting this interpretation.

The selected remedy calls for removal of these sediments from SJ-6 and if appropriate, other abandoned wells. If contaminant concentrations are above ARARS after sediment removal and appropriate testing, this situation will be reevaluated.

12. Comment: The scope and goals of additional groundwater monitoring efforts must be more clearly defined in the ROD.

Response: EPA disagrees. The selected remedy calls for monitoring groundwater downgradient of the site. Design details are not included in conceptual remedy selection.

13. Comment: Alternatives to plugging valuable municipal wells have not been evaluated.

Response: It is good practice to plug abandoned wells or seal wells temporarily while they are out of service. Exactly how the wells will be sealed is a design parameter.

14. Comment: The San Jose 6 Proposed Plan is not sufficiently protective of public health. Not all routes of exposure are evaluated and the clean up level should be 10^{-6} for individual chemicals.

Response: EPA has established an acceptable cancer risk range between 10^{-4} to 10^{-7}. The San Jose 6 site falls within this range and meets all numerical State and Federal standards. The proposed plan is protective of public health and the vital groundwater resources of the area.

Inhalation of VOC's from water can be a significant route of exposure but there is no standardized risk exposure model to estimate uptake of volatile organics from bathing or showering. If showering scenerio was considered, the excess cancer risk would be increased marginally. For example, a $1E^{-5}$ excess cancer risk was to be increased to a $2E^{-5}$.

15. Comment: The Remedial investigation did not identify or fully explore other potential contaminant sources, especially illegal dumping, sewer leakage, and petroleum sources. Specific facilities such as Jencor, the Atchison, Topeka, and Santa Fe Railroad (ATSF), and the Chevron facility should be investigated.

Response: EPA disagrees. All likely sources in the area have been identified. Any areas that require further study are being investigated. Illegal dumping at what is known as the Yale Landfill has undergone preliminary investigation by the EPA and a follow-up is being done by the State. This landfill is downgradient of the site and is not a likely source for it.

Sewer leakage was investigated and detection of contaminants was sporadic and insignificant. EPA proposes to install monitoring wells in close proximity to specific sewers to ensure that they are not leaking.

The Jencor facility has been studied and found not to be a source.

ATS&F as well as Chevron are involved in separate studies with EPA and the State.

16. Comment: The organic contaminants detected in SJ-6 prior to 1981 included organic solvents and petroleum products. Petroleum as a source of contamination to SJ-6 should not be ignored.

Response: 1980 data indicate only that contaminants were present but give no concentrations. Current data do not indicate that petroleum has contaminated SJ-6.

17. Comment: EPA has not defined its use of the terms "organic solvents" and "petroleum products". "Organic Solvents" appears to be restricted to chlorinated volatile organic compounds while "petroleum products" are characterized by organics such as benzene, toluene, ethyl benzene, and xylene. Since petroleum contains organic solvents as well as chlorinated solvents this delineation is artificial and arbitrary.

Response: EPA disagrees. The use of these terms is defined on page 4-36 of the RI and App. A of the FS. It is clear that EPA recognizes specific chlorinated compounds as petroleum additives.

18. Comment: The RI report incorrectly refers to the SV-10 drainage area as a "waste pit". It was actually constructed to control drainage. EPA also inaccurately states that organic chemicals and solvents were used (rather than repackaged) at the Edmunds site, and that spent solvents were shipped there for disposal (rather than shipped to an out-of-State recycling facility).

Response: EPA disagrees with this statement. EPA's information indicates that drum washwater was disposed of in the pit. The RI states that Van Waters and Rogers (VWR) handled spent solvents from customers for subsequent disposal by a waste-transportation company.

19. Comment: The RI report omits reference to two wells, one at Chevron and one at Duke City, which were taken out of service in 1961 due to taste and odor problems.

Response: EPA is aware of these wells but has no data regarding them.

20. Comment: The shallow aquitard and related shallow aquifer does not exist anywhere in the eastern portion of the SJ-6 area. The aquitard should be considered as occurring on an isolated basis rather than as an really extensive aquitard that is discontinuous only at the Edmunds Street site.

Response: EPA agrees that the shallow aquitard does not extend to the most eastern margin of the site, as depicted in Figure 4-2 of the RI report. The aquitard does appear to be continuous in the central and western segments of the site. A discontinuity is also depicted south of GE.

21. Comment: The depth of the clay aquitard in D-1 and D-2 does not correlate to depths in the rest of the area. EPA must describe the structural features responsible for the elevation differences.

Response: EPA disagrees. The clay aquitard (as well as the intermediate and deep strata), are eastward dipping beds. The top of this unit is most likely an erosional surface. This is a normal stratigraphic feature and does not require a structural change to explain it. Comparison of maps for the aquitard, the Intermediate, and the Deep Zones clearly show this.

22. Comment: Based on boring logs, the intermediate and deep zones are separated by a fine-grained unit composed predominantly of silt and clay in contradiction to EPA's statement that the intermediate and deep zones are in direct connection.

Response: EPA disagrees. The intermediate and deep zones are not separated by a continuous aquitard. EPA acknowledges the presence of interstratified fine-grained sand and silt. These laminae present local reductions in permeability but they cannot be correlated across the site. The direct hydraulic connection is well-supported by the similarity of major ion chemistry in groundwater from the intermediate and deep zones (pg. 5-17, RI report).

23. Comment: The map showing the Shallow Zone water table surface was constructed using the same Intermediate wells as the Intermediate Water table map. This is an obvious problem.

Response: This is a graphical error. Data used to construct the Shallow Zone map were from shallow wells. The data with the correct base map was mailed to the repositories.

24. Comment: EPA's calculation of the estimated migration distance for site contaminants is based on the highest groundwater velocity for the Intermediate Zone rather than the average velocity. The EPA estimate is based on an unrealistic assumption of "no retardation". Retardation would reduce EPA's calculated migration distance by a factor of 3 to 5.

Response: EPA developed the most conservative scenario, or fastest rate for potential contaminant transport (pg. 5-16, RI report). The calculated velocities are based on groundwater movement alone and EPA acknowledges these qualifying parameters on pg. 5-15 to 5-16 of the RI.

25. Comment: Eastern contaminant migration began as a result of off-site pumping, not solely as as result of well SJ-6 being taken out of service.

Response: EPA acknowledges this fact on pg. 5-3 of the RI report.

26. Comment: EPA has not presented any factual data to support the conclusion (pg. 5-3) that shallow zone contaminants may have been "hydraulically contained" at the site.

Response: It is stated in the report that contaminants were either transported through the aquifer and/or hydraulically contained at the site. There are also indications that eastward and northerly transport is occurring. As a result, the direction of contaminant flow in the shallow zone is inconclusive (pg. 5-9).

27. Comment: EPA states that contaminants originating from the study area may soon reach the closest downgradient supply wells (Well M-1 and the 3 golf course wells). The term "soon" should not be used in a scientific report. There is no evidence to support a southeast flow component towards the golf course wells.

Response: The flow rate of 2.3 ft/day was defined and qualified as being conservative, or fast. This results in a potential of about 5900 ft. of groundwater migration between 1981 and 1987 (pg. 4-30).

A southeast flow component has been hypothesized due to heavy pumping of the golf-course wells. The actual transport rate appears to be about 1100 ft. over a 10 year period.

28. Comment: EPA has not assessed the impact of compounds identified as laboratory contaminants and their effect on selecting Remedial Alternatives.

Response: Incorrect. All lab contaminants are flagged as such in the report. These compounds are not the contaminants on which decisions were based.

29. Comment: The presence of semi-volatile compounds in the SJ-6 area appears to be inconsistent with EPA's description of the sources.

Response: EPA disagrees. Semi-volatiles appear to be originating from a different source. The AT&SF facility is the most likely origin and is being investigated. Semi-volatiles are slightly concentrated only beneath Chevron, probably due to partioning in petroleum.

30. Comment: Heptachlor epoxide was detected and resulted in an unacceptable level of risk. This compound is not known to be associated with any of the six identified source areas.

Response: Heptachlor epoxide, a pesticide that is persistent in the environment, was detected only once in surface water of the AMAFCA channel. This is an isolated occurrence of a contaminant that very likely originated from an upgradient surface runoff source.

31. Comment: EPA failed to adequately address the interactions between the aquifer zones. EPA should have integrated contaminant assessments of the Shallow and Intermediate Zones, and the subsequent eastward extent of this contamination within the Intermediate Zone.

Response: EPA disagrees. Groundwater flows from the Shallow Zone to the lower part of alluvial fan deposit to the east as well as vertically through the aquitard. The Intermediate Zone is recharged with inflow from the alluvial fan deposits and the Shallow Zone. (pg. 4-25 to 4-28)

The eastern-most monitoring wells, aside from those at the Edmunds site, show substantial decreases in contaminant concentrations. These decreases indicate the plume margins.

32. Comment: Concentrations of VOC's in the intermediate aquifer increase to the east because contaminants originate in the western source area (i.e. GE, Duke City, Texaco, Chevron, and Whitfield Trucking). Contaminants orginate in the Shallow Zone, migrating to the east and downward into and through the intermediate zone (Shidler, McBroom, Gates and Lucas comments).

Response: EPA disagrees. This logic also contradicts the previous comment (p. 10; para 3 of Shidle, McBroom, Gates, and Lucas comments)that there is no vertical gradient within the intermediate zone.

33. Comment: Concentration maps of individual contaminants should have been made to examine areal trends. Contours of VOC's around I-4 abruptly end east of the Chevron property in the Intermediate Zone. The conclusion is that a plume of dissolved contaminants is traveling eastward but the area of contamination has not been defined.

Response: There are many graphical techniques to display data and EPA agrees that a water table map can be useful. However, the text concisely describes and correlates areal trends.

The VOC's detected in I-4 are petroleum products. This problem was referred to NMEID for investigation in a separate study. Neither NMEID oe EPA currently know the extent of this plume.

34. Comment: The report does not correlate the VOC's found in soils with VOC's found in groundwater. The limits of soil contamination are not adequately defined on most PRP properties.

Response: EPA disagrees. It is obvious from Figures 4-16 through 4-21, maps showing contaminant concentrations in the unsaturated and saturated soil zones, that soil and groundwater contamination were correlated to the extent practical. The only area where soil data is incomplete is on the Edmunds Street property.

35. Comment: A justification should be provided for the 5 ppb cutoff to determine whether laboratory contaminants were present, especially acetone, methylene chloride, toluene, and 2-butanone. To determine the absence or presence of laboratory artifacts the necessary dilutions must be considered.

Response: The 5 ppb cutoff is in accordance with EPA/CLP criteria for the low detection limits used at the SJ-6 site. Laboratory QA/QC show that regardless, these compounds are not the contaminants on which decisions have been based. Even if lab contaminants were present, it would not cause these elevated readings of chlorinated solvents.

36. Comment: EPA did not examine the combined data sets from Phase I and Phase II investigations and did not analyze the representativeness of the 1987 data.

Response: Incorrect. EPA did examine both data sets for trends and for representativeness. Shallow Zone data from 1985 were considered to be most representative and were therefore included in the body of the RI report. Data from 1985 and 1987 are included in the appendices.

37. Comment: Elevated VOC concentrations in HL-1 indicated on pg. 5-20 are based on one unconfirmed analysis in 1987. Unless the 1987 data were confirmed, groundwater in the vicinity of HL-1 must be considered uncontaminated.

Response: The 1987 data are validated by EPA's QA/QC analysis. These data show groundwater contamination in samples collected from HL-1.

38. Comment: Totaling VOC levels and contouring them as shown on Section 4 figures is inappropriate and cannot be used to interpret the occurrence of contaminants.

Response: EPA used figures in conjunction with data tables to convey this information. To contour each contaminant in this case would be confusing and would not be a concise presentation format.

39. Comment: There is insufficient coverage to draw any concentration contours for semivolatile compounds in the Deep Zone.

Response: EPA disagrees. The contour lines are dashed where appropriate.

40. Comment: EPA's approach to Assessment and Source Identification of SJ-6 contamination is fundamentally flawed. This is primarily with respect to the influence created by pumping SJ-6.

Response: EPA disagrees. The flow regimes and contaminant transport attributed to SJ-6, before and after pumping at SJ-6 was discontinued have been reasonably documented.

41. Comment: The United States Geological Survey modeled the Albuquerque-Belen Basin using the Regional Aquifer - System Analysis (RASA). Results of this model show that at the Regional Scale and on a refined scale, well SJ-6 did not capture groundwater from beneath the Edmunds Street site.

Response: EPA disagrees. According to the USGS this system is intended for use on a Regional Scale only. No conclusions regarding the capture zone of SJ-6 can be drawn from it. The refined modeling effort retained the original upper layer which is the upper 200 ft., the zone of interest. This scale is too coarse for any local interpretation. The vertical leakage through boreholes is also not considered.

42. Comment: Historical data and water quality data indicate groundwater flow at Edmunds Street was eastward in early 1970's, based on maps from 1960 and 1978. The statement that "downgradient migration began after 1981 when well SJ-6 was taken out of service" is not substantiated by Fig. 208.

Response: EPA disagrees with this interpretation. This figure is for a Regional area and was never intended to substantiate the local conditions generated by pumping SJ-6. EPA's data show that hydraulic responses were measured in all areas of the Superfund site.

43. Comment: The presence of petroleum fuel products in Well I-4 indicates that a source to the west should be suspected of contaminating SJ-6, rather than a source to the southeast.

Response: EPA disagrees. The source of petroleum in I-4 is very likely the pipeline immediately adjacent to I-4.

44. Comment: The SJ-6 aquifer test overestimates the zone of influence. The pump test data and analysis do not support the conclusion that the SJ-6 capture zone extends to all areas of the South Valley site.

Response: Data presented in Table K-4 (RI) indicate that pumping SJ-6 hydraulically influences a zone beyond the boundaries of the SJ-6 Superfund site. The hydraulic radius of influence and zone of contaminant capture do not coincide because of the sloping water table in the Deep Zone.

Simplifying assumptions required for modeling in conjunction with the complexity of the SJ-6 Superfund site preclude an absolute definition of the capture zone. The data strongly indicate that the zone of capture extends beneath and beyond the 6 PRP properties.

45. Comment: EPA's sequence for degradation of pechloroethylene to evaluate the occurrence of biological degration is flawed because it does not consider the data or the underlying assumptions for this process.

Response: This discussion in the RI report (p. 5-26) is general in nature. It indicates only that biological degradation does not appear to be significant at the site.

46. Comment: Nowhere in the report has the analytical data used to determine the perchloroethene (PCE)/Trichloroethene (TCE) ratio in SJ-6 been identified or presented. The 1984 data in Appendix O do not result in the ratio found in Table 5-5.

Response: Incorrect. The SJ-6 analytical data from 1981-1987 can be found in Table 4-23. The 1987 sampling results in the 0.43 PCE/TCE ratio are noted on Table 5-5.

47. Comment: With the exception of the 1984 data, data for SJ-6 are not included in Appendix O.

Response: Correct. These data are included in Appendix K, 1987 SJ-6 Pump Test and Sampling Technical Memorandum. Analytical data collected by parties other than EPA are also included in Table 5.5.

48. Comment: The City of Albuquerque believes that the recommended alternative for partial migration control to address groundwater contamination at San Jose 6 and vicinity is unacceptable. The recommended alternative will have an adverse health impact on the citizens of Albuquerque.

Response: EPA disagrees. Groundwater monitoring will ensure protection of the public health.

49. Comment: Restricting evaluation and comments for eight alternatives which resulted from the seven years of study to only 60 days is inappropriate.

Response: EPA disagrees. The required 21-day comment period was extended to allow greater public participation. All reports produced prior to 1988 was sent to the repositories as it was finalized. The Remedial Investigation Report was mailed to the repository in May. These are the critical data and interpretation documents. The Feasibility Study was in the repositories by July 7, 1988, allowing 2 weeks for review prior to the public meeting and 5 weeks after the meeting.

50. Comment: The City staff have reviewed the rules which regulate remediation of groundwater contamination under Superfund and disagree that law dictates the recommended action is the most appropriate solution.

Response: EPA disagrees. In the vicinity of SJ-6, all Federal and State numerical criteria are met, excluding contamination associated with PRP properties. All Federal health criteria are met. There are 2 slight exceedances of State health criteria which probably do not represent statistically significant problems.

Remediation of the sources and emanating contaminant plumes is being addressed in separate Records of Decision.

There is no added protection of public health to be gained by pumping and treating groundwater in this area.

51. Comment: Current statements by EPA appear to contradict previous statements. San Jose Number 6 was initially established as the number one Superfund site for the State of New Mexico because of the presence of surplus CERCLA - eligible contaminants in a deep aquifer and public water supply. To obtain this status, it was determined that the presence of these compounds was a significant health hazard. Now the EPA says that the health hazard posed by these contaminants is minimal.

Response: This is incorrect. Sites are listed on the National Priority List (NPL) to determine if a health threat exists based on preliminary information, The preliminary information for a site indicates only that a potential health threat exists and that the situation requires further study. EPA has studied the site and has determined that in the general vicinity surrounding SJ-6 (excluding PRPs and associated contamination) that there is a minimal health threat.

52. Comment: The City and State contend that during the interval of time the EPA has been studying this project, the contamination has spread to further threaten other city wells. Tests in the last six months have shown the presence of chlorinated solvents in San Jose Well Number 1. We foresee contamination and possible loss of additional public and private wells due to contamination of SJ-6 and vicinity.

Response: EPA disagrees. Groundwater from San Jose Well Number 1 was sampled in August 1988 and data show that contaminants have decreased to trace levels, less than .5 ppb.

53. Comment: EPAs decision is based on cost.

Response: Incorrect. EPAs decision is based on a technical evaluation of conditions at the site. Cost is a factor only when alternatives are equally protective. The less expensive remedy is typically selected.

54. Comment: The City of Albuquerque requests that New Mexico EID be made the lead in the Remediation of SJ-6 and vicinity. This request is made because NMEID is familiar with local needs and will be more responsive to the citizens.

Response: The lead agency for a site is determined when a site is placed on the National Priority List. This site was placed on the NPL in 1983.

55. Comment: EPA should have consulted with City and State officials before proposing a remedy publicly.

Response: EPA did do this. The New Mexico Environmental Improvement Division and Albuquerque public works staff were fully involved and consulted by EPA in the formulation of remedies.

56. Comment: EPA has used a health-risk guideline presented in EPAs Guidance on Feasibility Studies that considers one additional cancer case per 10,000 exposed individuals as acceptable. This guideline was meant to be applied only when numerical standards for compounds do not exist. The State and Federal Numerical Standards for site contaminants should apply. The State does not consider the 1 in 10,000 standard as acceptable.

Response: This statement is incorrect. All State and Federal numerical criteria were considered. Contaminants at the site, with the exception of PRP contamination, fall below these numerical criteria.

As an additional decision-making tool, EPA established a 10^{-4} to 10^{-7} acceptable risk range, documented in the Feasibility Study Guidance. The cumulative effect of contaminants at the site was calculated using the methods established in EPA's Public Health Evaluation Manual. The cumulative effect of contaminants at the site fall with the 10^{-4} to 10^{-7} Risk Range. The cumulative effective slightly exceeds the State Health criteria of 10^{-5} in groundwater from 2 out of 22 wells in the vicinity of SJ-6 in the Intermediate Zone. There are no exceedances, other than associated with PRPs, in the Shallow and Deep Zones.

57. Comment: NMEID considers EPA's claims that health risks posed by Superfund Compounds at the site are within acceptable health health limits and that petroleum contamination is pervasive as false.

Response: EPA disagrees. With the exception of PRP-associated problems, Superfund contaminants are below numerical criteria and Federal health-based criteria. In the vicinity of SJ-6 there are two locations where State health-based criteria are slightly exceeded.

With respect to petroleum, contamination in the Shallow Zone is pervasive. Contamination in the Intermediate Zone is detected only at one well but is highly concentrated.

58. Comment: Solvent contamination is evident in the residential area north of the site. The smell in the water is horrendous. If EPA could smell the water, they would understand why so many people are at the public meeting.

Response: EPA is aware that traces of solvent contamination have been detected in residential wells. These residents use municipal water for drinking and household purposes. The wells in question were sampled; compounds detected are below Federal health criteria. The State health criteria is slightly exceeded in one well that is used solely for irrigation. EPA plans to install monitoring wells in this direction to ensure protection of the public health.

EPA suspects that the strong odor mentioned is due to diesel or petroleum problems. These are currently being investigated by NMEID and the City of Albuquerque.

59. Comment: EPA has described the solvent contamination as being low risk, yet pollutants in San Jose 6 are above drinking water standards at 812 ft. Monitoring wells do not go past 310 ft. The extent of contamination is not adequately defined.

Response: EPA agrees that contaminants in SJ-6 are above drinking water standards. 1,1-DCE was present at 8 ppb, the standard is 5 ppb. This is very likely a situation caused by the condition of the well itself and not a regional groundwater problem. Over the years, contaminants have flowed down the borehole, adhering to about 100 ft. of sediment at the base. These sediments will be removed to prevent them from continuing to act as a secondary source. If concentrations remain above standards after sediment removal and appropriate testing, the situation will be reevaluated.

EPA has no reason to suspect contamination at depth. The deep monitoring wells are contaminant-free, excluding the one associated with PRP contamination, and the nearby municipal wells are also clean.

60. Comment: The local citizens and Southwest Research Institute are circulating a petition demanding cleanup of the groundwater and involvement of the local people. It will be sent to EPA by the close of the comment period.

Response: Through EPA and NMEID initiatives, the groundwater is being remediated.

EPA welcomes and requests involvement by the local citizens.

The above-mentioned petition was not received by EPA.

61. Comment: There used to be a dump near this site that could be causing part of this problem.

Response: EPA is aware of a dump called the Yale Municipal Landfill that is east of the SJ-6 site. This former dump is being investigated by the EPA. It is not suspected of contributing contaminants to the SJ-6 site because water flows towards it from SJ-6 rather than from the landfill towards SJ-6.

62. Comment: The EPA cleanup should include areas where residential wells are located. EPA should reimburse residents for the cost of replacing private wells that have been contaminated.

Response: EPA is going to monitor groundwater in close proximity to the residential wells to the northeast. EPA will only provide an alternate water supply in cases where wells are contaminated and an alternate water supply is not available. In this instance, groundwater contaminants are below all State and Federal Numerical criteria. They are below all Federal health criteria and exceed slightly the State health criteria.

The residents use municipal water for drinking and household use. EPA does not consider replacing these wells necessary.

63. Comment: As a representative of the Economic Opportunity Board, we request that the next meeting be held at the East San Jose Community Center. It is available at low cost, is less crowded, and not as inconvenient as a meeting held at the Radisson Hotel.

Response: EPA apologizes for the inconvenience but as the hotel is .25 mi. from the site, it seemed a fairly convenient location for the meeting. The cost of the room and audio/visual equipment for the SJ-6 meeting at the Radisson was $85.00. A comparable charge for a meeting at the Community Center would have exceeded $250.00.

The next meetings were held at the East San Jose Community Center.

64. Comment: San Jose Well Number 6 is not in the South Valley area of Albuquerque; it is in the San Jose area of Albuquerque.

Response: EPA appreciates the clarification and apologizes for the error. The location of the site was described in the initial package submitted to EPA as being in the South Valley.

65. Comment: The groundwater contamination in the vicinity of SJ-6 is so severe that it's causing children to break out with hives and get sick. The contamination floats on the water.

Response: EPA has no data to indicate any contaminant concentrations, except petroleum, that would cause health problems. To ensure that the public health is protected, EPA will monitor in close proximity to these residential wells.

66. Comment: The citizens of the Mountainview area, south of Albuquerque, have explosives in the groundwater. The basic remedy has been to bring City water to Mountainview. Now the citizens will have petroleum and solvents instead of explosives.

Response: EPA does not anticipate that the City water supply will be contaminated with any of these compounds.

67. Comment: If these contaminants were located in a prestigious, wealthy community of the Northeast Heights or among the country club luxury residences, can EPA claim that this identical position would be taken?

Response: Yes

68. Comment: There is no cleanup in the partial migration plan. It is allowing dilution over three to five generations to do the work that a pumping system could do in a much shorter time period.

Response: Superfund contaminants in groundwater that require remediation are being addressed through other EPA decisions. In the area that the SJ-6 decision addresses, Remediation is not required.

69. Comment: EPA says a lot of people are on city water but that is not the case. There are a lot of people on Williams Street that use well water.

Response: EPA surveyed the San Jose area in 1987. Although domestic wells were noted, EPA was told by the residents that they use city water. As there is apparent confusion in this area, EPA will re-evaluate the number and use of domestic wells before monitoring wells are installed. This will allow EPA to install monitoring wells in the most strategic position.

70. Comment: The site boundaries should be extended to cover the residential wells to the northeast. There are Superfund contaminants in these wells.

Response: The site boundaries were initially drawn to delineate an area of investigation. Contaminants that can reasonably be associated with the Superfund site will be addressed.

As previously stated, monitoring wells will be placed in close proximity to these residential wells.

71. Comment: The EPA's proposed cleanup of the San Jose site seems to fit the pattern that has been established at other sites around the country. EPA has continued to favor containment and/or disposal remedies despite the clear language in SARA. This language calls for cleanups that are protective of human health by employing permanent solutions to the maximum extent practicable.

Response: EPA disagrees. Through decisions for other segments of this site (the Edmunds Street decisions and the USAF/GE decision), EPA is initiating treatment that reduces the mobility, toxicity, and volume of contaminants. The SJ-6 decision will prevent contaminants from entering the drinking water supply through abandoned wells. Groundwater monitoring will ensure that the combination of remedies is effective, protective of public health, and the environment.

72. Comment: EPAs unrealistic schedule commitments are a major contributor to the present dilemma between EPA and SMEID. EPA is making a desperate effort to meet the Congressional mandate that EPA select remedies at a specified number of sites by September 30 of this year. Unfortunately, San Jose is on this list of sites for which EPA has planned to have a remedy selected by September 30 of this year. This remedy selection should be postponed until the USAF/GE remedy is selected.

Response: This site was scheduled 2 years ago, when defining the necessary investigations and analysis, for a September 1988 decision. This is an internal EPA schedule. EPA is unaware of the list that is being referenced.

Each of the remedies must comply with Superfund statute, therefore, which remedy is selected first is inconsequential.

73. Comment: When a location was selected for the replacement well (Burton No. 4), it was moved to a more distant location because the first location was thought to be too close to the contaminants. EPA felt that groundwater contamination would put a new well at the initial location selection out of service within 30 years.

Response: Knowledge of the site has been refined. The hydrogeology and groundwater quality were unknowns at the time a new well location was being selected. EPA desired a very safe, very conservative location for the new well.

Since that time, the hydrogeology and groundwater quality have been defined. EPA would now have more information on which to base a well location selection.

74. Comment: What happened to the $700,000 remedy and $70,000/yr operation and maintenance cost of 3 years ago for SJ-6? According to the fact sheet, it will now cost between $4 million to $70 million to remediate the site.

Response: The treatment requirements and alternatives evaluated are very different than the previous study.

It was at the City and State's request three years ago, that SJ-6 be replaced rather than pumping the groundwater and treating it. As the costs for each alternative were comparable, EPA opted to replace the well.

75. Comment: In the fact sheet of July 1988 it is stated that pumping of San Jose 6 drew and intermingled compounds that have been handled in the area for the past 40 to 50 years. Petroleum and industrial chemicals are referenced. The Remedy Selection criteria then states that EPA cannot clean up petroleum unless it is mixed with hazardous waste.

Response: This is poor wording in the Fact Sheet. In fact, petroleum and chlorinated solvents do not appear to be comingled except in the Shallow Zone beneath Chevron. The pentachlorophenol is presently below EPA action levels. The source of this pentachlorophenol is not likely to be Chevron. In the most recent sampling event (June 1988), no PCP was detected beneath Chevron. The source for this contamination is currently being investigated.

76. Comment: Unlike the EPA, the Underground Storage Tank Program is making Chevron and Texaco define the extent of their contamination. The cleanup will be done to numerical standards.

Response: EPA has reasonably determined the eastern extent of contamination. Further refinement is necessary north of USAF/GE.

The New Mexico Water Quality criteria specify that groundwater will either achieve numerical criteria or the 10^{-5} cumulative health criteria, whichever is more stringent. EPAs experience shows that the 10^{-5} criteria is more stringent. If this criteria is not consistently applied, it is not an ARAR.

77. Comment: EPA discounted risk attributable to PRP contamination and overestimated risk attributed to petroleum.

Response: This is incorrect. Risk was evaluated using the highest concentration of any given compound detected in a specific zone. This includes data collected from wells on PRP properties. A conservative or worst-case, evaluation of risk results from this approach.

78. Comment: EPA should explain in detail the procedure and authority that they intend to use when imposing deed restrictions. Citizens want to keep their wells and use water from that area.

Response: Deed restrictions will be implemented through the State Engineer's Office. For new well installations, they most likely will consist of specific well design requirements to prevent cross-contamination of zones. The shallowest depth at which wells can be completed will also be specified to prevent potential exposure.

EPA plans to install monitoring wells in close proximity to existing domestic wells. Unless contaminants are detected in the new monitoring wells, the existing wells will not be affected by access restrictions.

79. Comment: The availability of Technical Assistance grants should be mentioned.

Response: Correct. The Technical Assistance grants allows a group to hire an expert to interpret and evaluate EPA studies for the public. Information on them is available through Ms. Ellen Greeney at (214) 655-6720.